INCH-POUND

MIL-PRF-83726/35A
15 February 2000
SUPERSEDING
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PERFORMANCE SPECIFICATION SHEET

# RELAYS, HYBRID, TIME DELAY (ON OPERATE), CLASS B, TYPE I, HERMETICALLY SEALED, 4PDT, 10 AMPERES, FIXED TIME DELAY, 0.1 TO 600 SECONDS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the relay described herein shall consist of this specification and MIL-PRF-83726.

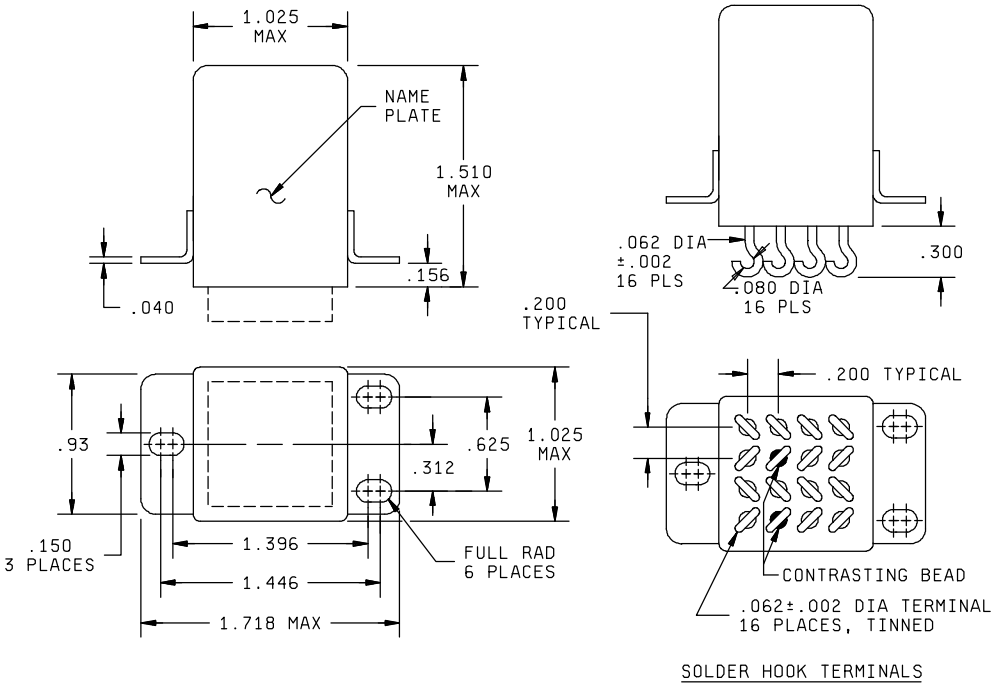
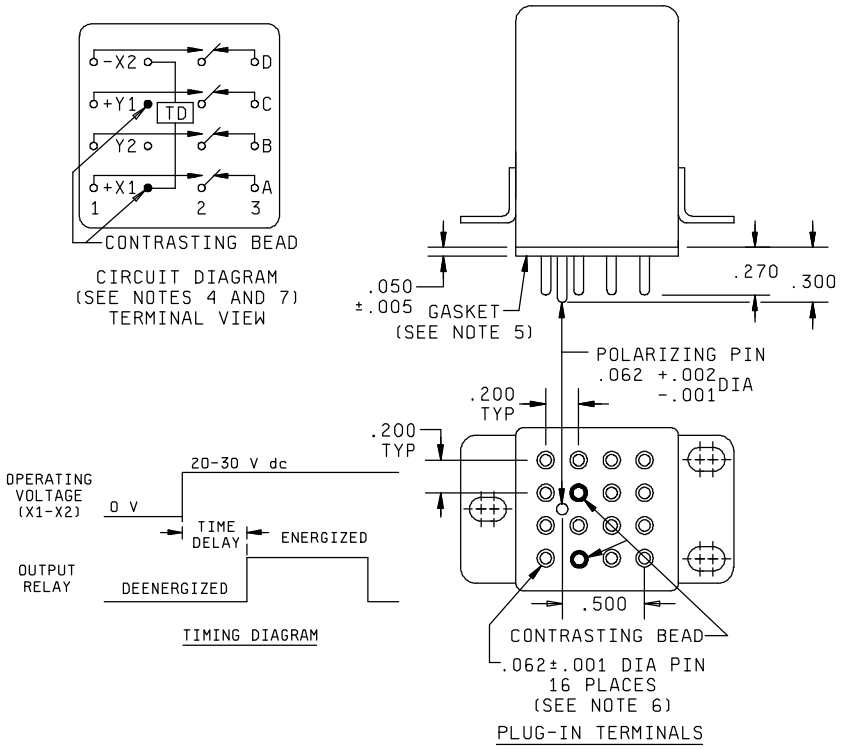



FIGURE 1. Outline dimensions and configuration of relay.




| Inches | mm | Inches | mm |
|---|---|---|---|
| .001 | 0.03 | .300 | 7.62 |
| .002 | 0.05 | .312 | 7.92 |
| .005 | 0.13 | .625 | 15.88 |
| .040 | 1.02 | .930 | 23.60 |
| .050 | 1.27 | 1.025 | 26.04 |
| .062 | 1.57 | 1.396 | 35.46 |
| .150 | 3.81 | 1.446 | 33.73 |
| .156 | 3.96 | 1.510 | 38.35 |
| .200 | 5.08 | 1.718 | 43.64 |
| .270 | 6.86 | | |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.010 (0.25 mm) for three place decimals and ±.03 (0.76 mm) for two place decimals.
4. Terminal numbers shall not appear on the relay header and there shall be a legible circuit diagram on the relay which identifies each terminal location specified.
5. Gasket material: The gasket material shall be of such quality to ensure the relay meets all the performance requirements of this specification. Silicone rubber gasket AMS 3332, shore hardness 15 to 35 has been considered acceptable.
6. Terminal composition: The terminal composition shall be of such quality to ensure the relay meets all the performance requirements of this specification. Gold in accordance with AMS 2422 or ASTM B488, Type 3; underplating: nickel, 50 to 150 microinches thick; has been considered acceptable.
7. Terminals Y1 and Y2 are not used.

FIGURE 1. Outline dimensions and configuration of relay – Continued.

REQUIREMENTS:

OPERATING REQUIREMENTS:

Timing action: Delay-on-operate.

Time delay: Fixed; select from 0.1 second to 600 seconds.

Timing accuracy: ±10 percent of nominal value. (The accuracy requirement applies for any combination of operating temperature and voltage. Add ±10 ms for timing less than 1 second.)

Recycle time: 50 milliseconds maximum.

Power interrupt: 500 microseconds. (Transient and power loss specifications are based on a maximum duty cycle of 1/50.)

Operating current: 150 mA maximum at 25°C.

INPUT REQUIREMENTS:

Input voltage range: 20 V dc to 30 V dc. (Minimum high temperature test 21 V dc, minimum continuous current test 23.5 V dc.)

Duty rating: Continuous.

Polarity protection: The timer shall be inoperative during, and undamaged by, reversal of the polarity of the operating voltage.

OUTPUT REQUIREMENTS: (At +25°C unless otherwise specified.)

Configuration: 4PDT.

Life: See table I.

TABLE I. Life load ratings (relay case grounded).

| Type of load | Life (cycles) | Amperes 28 V dc | Amperes 115/200 V ac 400 Hz |
|---|---|---|---|
| Resistive | 100,000 | 10 | 10 |
| Inductive | 20,000 | 8 | 8 |
| Motor | 100,000 | 4 | 4 |
| Lamp | 100,000 | 2 | 2 |
| Low level 1/ | 100,000 | | --- |

1/ Contact load 10 µA to 50 µA at 10 mV to 50 mV (dc or peak ac).

ELECTRICAL REQUIREMENTS:

Transients: In accordance with MIL-STD-704 for 28 volts dc system (figure 11).

Spike:

Self-generated: ±50 volts maximum.

Spike transients: ±600V, 10 microseconds maximum.

Susceptibility: + 80V maximum; -600 V maximum.

Electromagnetic interference: In accordance with MIL-STD-461, class 1D. (EMI test limits will not be exceeded during the timing interval or when continuously energized under steady-state conditions in accordance with the EMI test of MIL-PRF-83726.)

Insulation resistance: 1,000 megohms at 500 V dc at sea level, and 100 V dc at 80,000 feet between each pin and case. (Terminals X1 and X2 must be connected together during this test. Insulation resistance is measured between all mutually insulated terminals and between all terminals and case.)

Dielelectric withstanding voltage: 1,000 V rms at 60 Hz at sea level, and 350 V rms at 80,000 feet between case and pins connected together. (Terminals X1 and X2 must be connected together during this test. Dielectric withstanding voltage is measured between all mutually insulated terminals and between all terminals and case.)

ENVIRONMENTAL REQUIREMENTS:

Ambient temperature:

Operating: -55°C to +125°C.

Nonoperating: -65°C to +125°C.

Vibration (sinusoidal): 30 G, 10 Hz to 3,000 Hz.

Vibration (random): 0.4 $g^2$/Hz power spectral density, 50 Hz to 2,000 Hz in accordance with MIL-STD-202, method 214, test condition 1B.

Shock (specified pulse): 100 g's, 6 ±1 ms, ½ sine, 3 axes.

Acceleration: 15 G in any axis.

Seal: Hermetic.

Maximum altitude rating: 80,000 feet.

PHYSICAL REQUIREMENTS:

Dimensions and configuration: See figure 1.

Mating socket: MIL-PRF-12883/40-06, MIL-PRF-12883/40-12, MIL-PRF-12883/40-18, or MIL-PRF-12883/40-24. (CAUTION: Consideration should be given to ambient temperature and current requirements when using wire barrels size 20.)

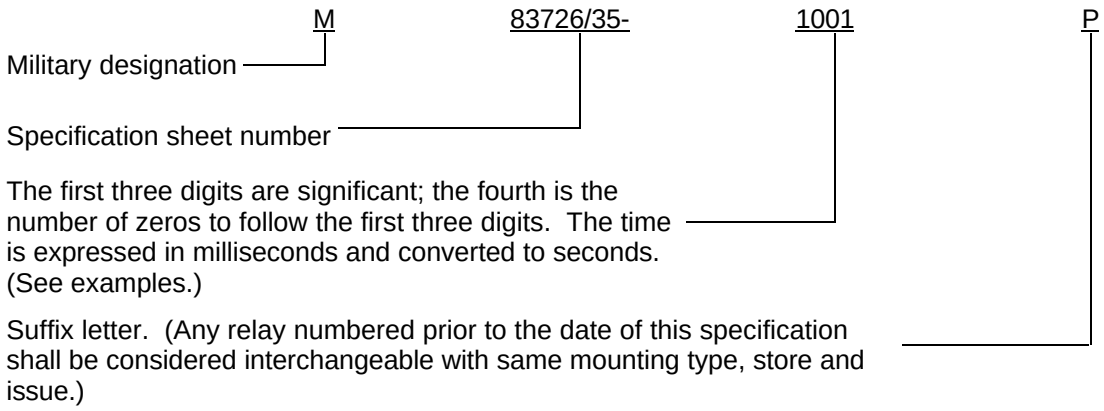
Terminations: See figure 1.

Terminal strength: 3 pounds pull.

Weight: 3.0 ounces maximum.

Marking: See MIL-PRF-83726. In addition, relays shall be marked with the ESDS identifier as specified in MIL-STD-1285.

Part or Identifying Number (PIN): Consists of the prefix M83726/35-, a four digit dash number (time delay expressed in milliseconds), and a suffix letter (P for plug-in, S for solder lug):




Examples:

M83726/35-1001P – 1 second time delay, plug-in.
M83726/35-9002S – 90 second time delay, solder lug.

NOTE: Time delay relays within the 0.1 second to 600 second delay range are available.

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Army – CR
Navy - EC
Air Force - 11
DLA – CC

Preparing activity:
DLA - CC

(Project 5945-1081)